

Wonderbuilds Inc. Ltd

Unit 3 Streakes Field Road
Staples Corner
London NW2 7GD

Tel: 020 8208 2121 Fax: 020 8208 2121

e-mail: info@wonderbuilds.co.uk

website: www.wonderbuilds.co.uk



Agrément Certificate

16/5385

Product Sheet 3

WONDERBUILDS BREATHER MEMBRANES

WONDERVENT FOR USE IN TIMBER-FRAME CONSTRUCTIONS

This Agrément Certificate Product Sheet⁽¹⁾ relates to WonderVent Breather Membranes, flexible three-layer polypropylene sheet materials for use as breather membranes in timber-frame walls with a cavity and a masonry outer leaf, weatherboarding or tile/slate cladding.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



KEY FACTORS ASSESSED

Weathertightness — the products will contribute to protecting a wall against water penetration (see section 6).

Risk of condensation — the products have low water resistance to water vapour transmission and can contribute to reducing the risk of interstitial condensation (see section 7).

Strength — the products have adequate strength to resist damage during the construction of walls (see section 8).

Durability — the products will have a life equal to that of the building in which they are installed (see section 11).



The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 21 February 2017

John Albon – Head of Approvals
Construction Products

Claire Curtis-Thomas
Chief Executive

The BBA is a UKAS accredited certification body – Number 113.

*The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk
Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.*

British Board of Agrément

Bucknalls Lane
Watford
Herts WD25 9BA

tel: 01923 665300

fax: 01923 665301

clientservices@bba.star.co.uk

www.bbacerts.co.uk

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Regulations

In the opinion of the BBA, WonderVent Breather Membranes for use in timber-frame constructions, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	C2(b)	Resistance to moisture
Comment:		The products will contribute to a roof meeting this Requirement. See section 6.1 of this Certificate.
Requirement:	C2(c)	Resistance to moisture
Comment:		The products will contribute to a wall meeting this Requirement. See section 7.1 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The products can contribute to a construction satisfying this Regulation. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.10	Precipitation
Comment:		The products will contribute to a roof satisfying clauses 3.10.1 ⁽¹⁾⁽²⁾ and 3.10.5 ⁽¹⁾⁽²⁾ of this Standard. See section 6.1 of this Certificate.
Standard:	3.15	Condensation
Comment:		The products can enable a wall to satisfy this Standard with regard to interstitial condensation. See section 7.1 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The products can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	12	Building standards applicable to conversions
Comment:		Comments in relation to the products under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ .

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	23(a)(i)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)	The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	28(b)	Resistance to moisture and weather
Comment:		The products will contribute to a roof satisfying this Regulation. See section 6.1 of this Certificate.
Regulation:	29	Condensation
Comment:		The products can enable a roof to satisfy this Regulation. See section 7.1 of this Certificate.

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (Principal Contractor) to address their obligations under these Regulations.

See section: 1 Description of this Certificate.

Additional Information

NHBC Standards 2017

NHBC accepts the use of WonderVent Breather Membranes for use in timber-frame constructions, provided they are installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.2 *External timber framed walls*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products, in accordance with harmonised European Standard BS EN 13859-2 : 2014. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

WonderVent Breather Membranes for use in timber-frame constructions are three-layer polypropylene composites with the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (unit)	WonderVent Breather Membranes			
	Classic 100	120 Pro	140 Premier	160 Ultra
Thickness (mm)	0.45	0.5	0.6	0.7
Mass per unit area* ($\text{g}\cdot\text{m}^{-2}$)	100	120	140	160
Roll length* (m)	any	any	any	any
Roll width* (m)	any	any	any	any
Colour				
upper	various	various	various	various
lower	various	various	various	various
Tensile strength* [$\text{N}(50\text{ mm})^{-1}$]				
longitudinal	255	285	305	340
transverse	150	195	220	235
Elongation* (%)				
longitudinal	95	90	60	70
transverse	135	130	100	120
Tear resistance* (N)				
longitudinal	135	175	195	255
transverse	190	225	295	355
Watertightness*				
unaged	W1	W1	W1	W1
aged ⁽¹⁾	W1	W1	W1	W1
Water vapour transmission* (S_d)(m)	0.02	0.02	0.02	0.02

(1) Aged in accordance with BS EN 13859-2 : 2014, Annex C.

2 Manufacture

2.1 The membranes are manufactured by thermally bonding two layers of non-woven polypropylene with a micro-porous film between the layers, to form a breathable waterproof membrane.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control being operated by the manufacturer are being maintained.

3 Delivery and site handling

3.1 Rolls of membrane are delivered to site individually wrapped in polythene foil with a label bearing the product name, the mass per unit area and the BBA logo incorporating the number of this Certificate.

3.2 The rolls should be stored flat or on end on a clean, level surface and kept under cover.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on WonderVent Breather Membranes for use in timber-frame constructions.

Design Considerations

4 Use

4.1 The membranes are satisfactory for use as on-site or factory-applied breather membranes in timber-frame walls with a cavity and a masonry outer leaf, weatherboarding or tile/slate cladding.

4.2 In the absence of other guidance, suitable timber-frame walls are defined as those designed and built in accordance with *NHBC Standards 2017*, Chapter 6.2.

4.3 The products meet the requirement for a Class W1* material in accordance with BS EN 13859-2 : 2014 and the NHBC requirement given in the *NHBC Standards 2017*, Chapter 6.2, as high-performance breather membranes for use in very severe conditions⁽¹⁾.

(1) Very severe conditions are defined in the *NHBC Standards 2017*, Chapter 6.1, Clause 6.1.6 *Exposure* — see Figure 1 showing categories of exposure to wind-driven rain.

5 Practicability of installation

The products are designed to be installed by competent general builders or contractors, experienced with these types of products.

6 Weathertightness



6.1 The products are Class W1* in accordance with BS EN 13859-2 : 2014 and will resist liquid water penetration and wind-blown snow, and will protect the sheathing and frame from external moisture.

6.2 The products may be used as temporary waterproofing during construction. The period of such use should, however, be kept to a minimum.

7 Risk of condensation



7.1 For design purposes, the products' water vapour resistance may be taken as less than or equal to $0.6 \text{ MN}\cdot\text{s}\cdot\text{g}^{-1}$ and they are classified as breather membranes in accordance with BS 5250 : 2011. Walls incorporating the products, therefore, will adequately limit the risk of interstitial condensation when designed and constructed in accordance with BS 5250 : 2011, Annex G.

7.2 The risk of condensation occurring within the wall of a timber-frame building will depend upon the properties and vapour resistance of other materials used in the construction, the internal and external conditions, and the effectiveness of the internal vapour control layer.

8 Strength

8.1 The products will resist the normal loads associated with assembly and installation of timber-frame constructions.

8.2 The products are not adversely affected by water and will retain their mechanical properties when wet.

9 Properties in relation to fire

9.1 The products are Class E* in accordance with BS EN 13501-1 : 2007.

9.2 The products will have similar properties in relation to fire to those of traditional polyethylene membranes, tending to burn and shrink away from the heat source. The products are unclassifiable in terms of the Building Regulations and this must be considered when assessing the overall fire risk.

9.3 Cavity barriers should be used to satisfy the requirements of the national Building Regulations.

10 Maintenance

As the products are confined to the wall space and have suitable durability (see section 11), maintenance is not required. However, any damage occurring before enclosure must be repaired (see section 15).

11 Durability



The products will be unaffected by the normal conditions found in timber-frame walls and will have a life equal to that of the building in which they are installed.

12 Reuse and recyclability

The products contain polypropylene, which can be recycled.

Installation

13 General

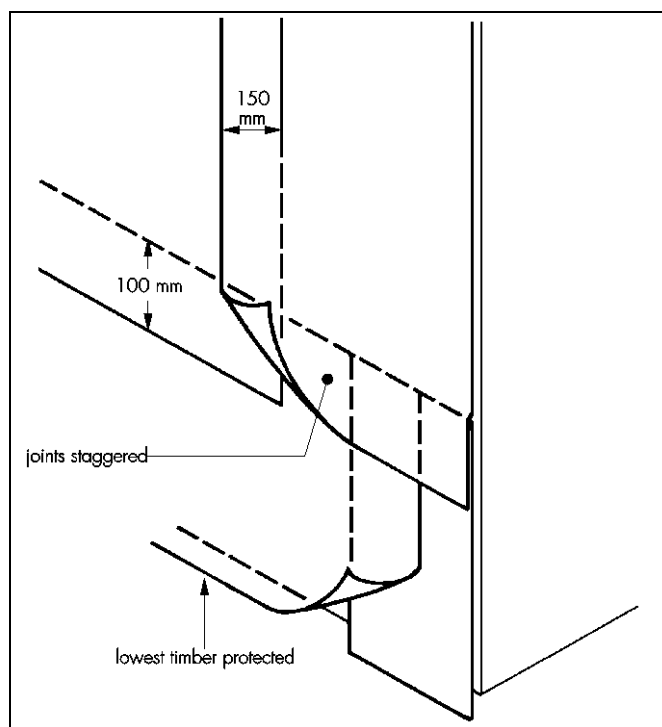
The products must be installed in accordance with the Certificate holder's instructions and the recommendations given in *NHBC Standards 2017*, Chapter 6.2, where appropriate.

14 Procedure

14.1 The products must be secured at regular intervals not exceeding 500 mm, with stainless steel staples or nails to prevent damage by wind action.

14.2 Upper layers should overlap lower layers to shed water away from the sheathing. Vertical laps should be staggered wherever possible (see Figure 1).

Figure 1 Membrane installation



14.3 Horizontal laps should not be more than 100 mm and vertical laps not more than 150 mm.

14.4 It is essential that the positions of the studs are marked on the face of the breather membrane, usually by tape, to enable fixing of wall ties and battens.

14.5 It is essential that the lowest timbers in the wall are protected by the breather membrane.

15 Repair

The products can be damaged by careless handling, high winds or vandalism. Damage to the membranes must be repaired prior to the installation of external walls or cladding by laying another sheet over the damaged area and by patching and sealing correctly, ensuring that water is shed away from the sheathing.

Technical Investigations

16 Tests

An assessment was made of data to BS EN 13859-2 : 2014 in relation to:

- dimensions*
- mass per unit area*
- tensile strength and elongation*
- resistance to tear*
- dimensional stability
- resistance to water penetration*
- resistance to artificial ageing*
- water vapour transmission*.

17 Investigations

The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of materials used.

Bibliography

BS 5250 : 2011 *Code of practice for control of condensation in buildings*

BS EN 13501-1 : 2007 + A1 : 2009 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

BS EN 13859-2 : 2014 *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Underlays for walls*

18 Conditions

18.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

18.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

18.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

18.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

18.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

18.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.